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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/143,583	08/31/1998	CHARLES EDWARD BOWERS	30-2138CIP2	3710 24

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HONEYWELL INTERNATIONAL INC.
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EXAMINER

YAO, SAMCHUAN CUA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS 24

Office Action Summary

Application No.

09/143,583

Applicant(s)

BOWERS, CHARLES EDWARD

Examiner

Sam Chuan C. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 4-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Queen et al (US 5,567,256) in view of (Stahlecker et al (US 4,484,433) or Nomura et al (US 5,611,819), Scott (US 4,668,552), and GB 2,205,116 A.

With respect to claims 1 and 15, Queen et al discloses a process of making blended yarns for carpet rugs, the process comprises spinning 70-90% of cotton fibers and 30-10% of heat-activated polyester binder fibers to form blended yarns, ply twisting the blended yarns; and then heat-setting the ply twisted yarns at a temperature of about 275 °F (i.e. 135 °C) to melt the binder fibers "*so that the cotton fibers are impregnated, reinforced and strengthened*" by the fibers (abstract; col. 1 line 48 to col. 3 line 4; claim 1; figure 1). Although not explicitly disclosed, it is understood that, a bundle or a sliver of cotton fibers is fed into a spinning station. In any event, such would have been obvious in the art as such is conventional in the art of forming yarn by spinning. Moreover, reading the Queen et al patent as a whole, one in the art would have reasonably understood that, the cotton fibers and heat-activated binder fibers are separately fed into a

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spinning device (i.e. blending is performed at a yarn level) as evidence from figure 1 and passages in column 1 lines 50-52 and column 2 lines 51-54. In any event, such would have been obvious in the art because: a) it is old in the art to form "*a blended yarn*" or a "*mixed yarn*" by separately feeding different types of fibers into a ring or wrap spinning machine as exemplified in the teachings of Nomura et al (col. 7 line 63 to col. 8 line 12) or Stahlecker et al '433 (abstract; col. 1 lines 6-12; col. 2 lines 3-19; col. 3 lines 40-43; col. 4 lines 29-58; figure 2); and b) it is also old in the carpet making art to separately feed a "[t]exturized [b]inder [y]arn" and a base fiber to a wrap spinning operation to uniformly spirally wrapped the binder yarn around the base fiber to form a tufting yarn as taught for example by Scott (col. 6 lines 52-68; figures 3-5 and 8, and Counsel's characterization of Scott's process illustrated in figure 3 of Paper No. 23).

Queen et al differs from claims 1 and 15, in that, Queen does not expressly disclose the type of spinning technique which is used in making a blended yarn. In particular, Queen et al does not expressly disclosed using either a ring-spinning or wrap spinning method in forming a blended yarn. However, it would have been obvious in the art to use either a ring-spinning or wrap spinning technique in making a blended yarn taught by Queen et al, because: a) it is conventional in the art to make yarns by either ring spinning method or wrap spinning method; b) it is known in the art of making yarn to form a blended or mixed yarn by wrap or ring spinning method as disclosed for example by Stahlecker et al '433 (col. 2 lines 3-11; col. 3 lines 40-43; figure 2) or Nomura et

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al (col. 7 line 63 to col. 8 line 12); and c) it is well known in the art to **wrap-spin** and heat-activate a blend of binder-fibers containing heat-activated adhesive and base fibers to stabilize a blended carpet yarn thereby *"improving the tuft definition and appearance retention"* as exemplified in the teachings of GB '116 (abstract; page 6 full paragraph 1; claim 1).

With respect to claim 3, it is conventional in the art to form bundles of staple cotton fibers by spinning them together.

3. Claims 1-3 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahlecker et al (US 4,495,758) in view of Lofquist (US 5,478,624), Queen et al (US 5,567,256), GB 2,205,116 A, and Scott (US 4,668,552).

Stahlecker et al '758 discloses a process of making wrapped yarns, the process comprises wrap spinning a binder strand and a yarn sliver together to spirally wrap the binder strand around the yarn sliver (col. 1 lines 9-40; abstract).

It is unclear whether the binder strand taught by Stahlecker et al and the binder strand of related arts disclosed in the background of the invention are heat-activated adhesive. In any event, such would have been obvious in the art making carpet yarns using the process taught by Stahlecker et al '758 because: a) GB '116 discloses spinning such as **wrap-spinning** and heat-activating a blend of binder-fibers containing heat-activated adhesive and base fibers to stabilize a blended carpet yarn thereby *"improving the tuft definition and appearance retention"* (abstract; page 6 full paragraph 1; claim 1); b) Queen et al discloses making yarns for carpet rugs by spinning cotton fibers and heat-activated binder fibers to form blended yarns, ply twisting the blended

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yarns and then heat-setting the ply twisted yarns to melt the binder fibers "*so that the cotton fibers are impregnated, reinforced and strengthened*" by the fibers (abstract; col. 1 line 48 to col. 3 line 4; claim 1; figure 1); and c) it is old in the carpet art to form a yarn by spirally wrapping heat-activated binder fibers around base fibers using **wrap-spinning** technique as exemplified in the teachings of Scott (col. 2 lines 60-65; col. 6 lines 52-68; figures 3-4 and 8-9; and, figure 3 of Counsel's characterization of Scott in Paper No. 23). Note: Scott also discloses the advantage of enhancing "*the integrity of the fabric*" in using heat-activated binder fibers in forming a blended wrap yarn (col. 2 lines 60-65).

Stahlecker et al '758 does not teach twisting two or more yarns to form a plied yarn and then heat-setting the plied yarn. However, it would have been obvious in the art, motivated by the desired to apply the yarn making process of Stahlecker et al to form carpet yarns, to twist two or more yarns to form a plied yarn and then to heat-set the plied yarn as such is conventional in the art of making carpet yarns as evidence from the teachings of Lofquist (col. 1 62 to col. 2 line 13) in order to obtain the desired carpet yarn bulk. Note: as noted above, Queen et al also teaches twisting two or more yarns to form a plied yarn and then heat-setting the plied yarn.

The process of Stahlecker '758 and the related art are silent on the composition of the binder relative to the yarn sliver. However, such would have been obvious in the art because Lofquist discloses the desirability of blending 1-12 weight per cent of binder strand to a base yarn to form a carpet yarn (col. 2 lines 28-58); because Scott discloses spirally wrapping about 3-10 weight per cent (based on the total weight of the yarn) of

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binder strand around a base strand (claims 2 and 6); and, because one in the art would have determined a workable composition of a blended yarn for the desired end-use of the article. As for the steps of heating to melt the binder around the yarn and cooling to harden the binder, such would have been obvious in the art as such is conventional in the art as taught by Scott and Lofquist.

With respect to claims 2-3 and 14-15, see column 3 line 13 to column 4 line 42 of the Lofquist patent. These claims would have been obvious in the art for the same reasons as numbered paragraph 2.

Double Patenting

4. Claims 1-3 and 14-15 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 16, 18 and 21 of copending Application No. 08/933,822 for reasons of record in Paper No. 6 numbered paragraph 7. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-3 and 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the base fiber materials listed in a Markush group is confusing. In particular, the listed fiber materials "polyamides, nylon-6, nylon-6,6

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..." are confusing. Shouldn't nylon 6 and nylon 6,6 be particular species of polyamides? Does this claim preclude using polyamides that are not nylon 6 or nylon 6,6?

Response to Arguments

7. Applicant's arguments filed on 08-14-03 have been fully considered but they are not persuasive.

Counsel's argument essentially can be sum up to the following:

The prior art references blend distinct fibers (i.e. low melting binder fibers and base fibers) prior to subjecting them to a spinning operation in forming a yarn (i.e. blending is performed at a fiber level), so that, *"the low melting" binder fibers in a resultant yarn are "randomly disperse in the base fibers."* *"In the present invention, the ring spun or wrap spun yarns have two distinct yarn components-a first fiber bundle essentially of base fibers and a second fiber which comprises heat activated binder fibers."* (blending is performed at a yarn level). In particular, figure 1 (present invention) and figure 2 (Queen et al and GB '116 A) were provided to illustrate the key difference between the present invention and the prior art processes. Moreover, to provide further support to Counsel's contention that, the prior art processes require preblending of distinct component fibers, a 37 USC 1.132 declaration made by Professor William Oxenham was presented to comment on the term *"blending"* as understood in the textile making art. In response, Examiner strongly disagrees with Counsel's characterization of the Queen et al patent. There is nothing in the Queen et al patent which expressly

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discloses binder fibers and cotton base fibers are blended prior to being subjected to a spinning operation. Moreover, contrary to Counsel's illustration in figure 2, figure 1 of the Queen et al patent does not show intervening blending step. In fact, figure 1 of the Queen et al shows that, cotton fibers and polyester binder fibers are separately fed into a spinning process. Moreover, in column 1 lines 49-52 of the patent, it states that *"Spinning about 70-90% cotton fibers with about 30-10% low melting temperature polyester fibers ... to produce blended yar[n]s"* and further teaches in column 2 lines 51-54 that *"... the cotton fed to the spinning stage 10 is 70-90% of the total fiber, ... while the polyester is 30-10% ..."* (emphasis added). As for a passage in column 2 lines 38-40 where it states *"A blend of primarily cotton fibers and ... polyester fibers are spun-as indicated schematically by box 10-into blended yarns."*, one reading this passage in the context of the whole teachings of Queen et al would have reasonably understood that, the phrase *"A blend of ..."* is referring the components of a yarn after the components have been spun, and not prior to being spun. In any event, it would have been obvious in the art to separately feed cotton fibers and binder polyester fibers in a process taught by Queen et al, because it is old in the art to form a blended yarn or mixed yarn by separately feeding different fiber components to a spinning operation as exemplified in the teachings of Stahlecker et al '433 (col. 1 lines 9-40; abstract) or Nomura et al (col. 7 line 63 to col. 8 line 12); and, it is also old in the carpet making art to separately feed a "[t]exturized [b]inder [y]arn" and a base fiber to a wrap spinning operation to uniformly spirally wrapped the binder

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yarn around the base fiber to form a tufting yarn as taught for example by Scott (col. 6 lines 52-68; figures 3-5 and 8, and Counsel's characterization of Scott illustrated in figure 3 of Paper No. 23). As for a declaration under 37 USC 1.132 made by Prof. Oxenham, the declaration is off-point with regard to the Queen et al patent. It may be true that, **in general**, to form a blended yarn, where blending is performed "*at the fiber level rather than at the yarn level*". However, this is NOT always the case as evidence from the teachings of Nomura et al (col. 8 lines 8-13) or Stahlecker et al '433 (col. 2 lines 3-41; col. 4 lines 26-58; figure 2), where both these references show blending is performed at a yarn level. More importantly, Prof. Oxenham failed to comment on whether or not, the disclosure of Queen et al as a whole would have suggested to one in the art that, cotton fibers and polyester fibers are blended before being spun to form a blended yarn. Therefore, it is suggested for Counsel to submit another declaration from Prof. Oxenham to address this issue.

As for Counsel's argument regarding the GB '116 patent, Examiner agrees that, the GB '116 patent teaches blending base and binder fibers before subjecting them to spinning operation (i.e. wrap spinning) to form a blended yarn. However, it should be noted that, GB '116 is merely cited to show that the art recognizes and appreciates the advantages of using heat-activated binder in forming a yarn. The teachings of GB '116 along with the other secondary references would have motivated one in the art to use a heat-activated binder fiber in the process taught by Stahlecker '758.

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As for Counsel's argument regarding the Lofquist patent, such is moot, since the rejection using Lofquist as a primary reference has been withdrawn. Similarly, a 37 USC 1.132 declaration made by Bowers regarding the Lofquist patent is also moot.

As for Counsel's argument regarding the Stahlecker et al '758 patent, Examiner maintains that, it would have been obvious in the art to use heat-activated binder in the process taught by Stahlecker et al for reasons set forth above; regardless of whether or not terms "*blend*" and variant thereof are expressly taught by Stahlecker et al '758. Stahlecker et al '433 is cited as evidence showing that it is known in the art to blend distinct fibers at a yarn level using wrap-spinning technique to form a "*mixed yarn*".

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (703) 308-4788. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W Ball can be reached on (703) 308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.


Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

Scy
08-26-03